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**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 14185/PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB 03/00024	International filing date (day/month/year) 08.01.2003	Priority date (day/month/year) 09.01.2002
International Patent Classification (IPC) or both national classification and IPC C08B37/08		
Applicant ABBOTT LABORATORIES DE COSTA RICA LTD. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
  
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
 

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of    sheets.

3. This report contains indications relating to the following items:
 

I    ☒ Basis of the opinion

II   ☐ Priority

III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability


IV ☐ Lack of unity of invention

V   ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

VI ☐ Certain documents cited

VII ☐ Certain defects in the international application

VIII ☐ Certain observations on the international application

Date of submission of the demand  28.07.2003	Date of completion of this report  02.02.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Radke, M  Telephone No. +49 89 2399-8677



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/IB 03/00024**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-11 as originally filed

**Claims, Numbers**

1-42 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/B 03/00024**

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	4-8,10-42
	No: Claims	1-3,9
Inventive step (IS)	Yes: Claims	10-42
	No: Claims	4-8
Industrial applicability (IA)	Yes: Claims	1-42
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Cited literature**

(a) Reference is made to the following documents:

**D1: HIRANO S. ET AL.:** 'Calcium Chloride as Biometric Intermediate for the Mineralization of Carbonate Ions of Water as Calcium Carbonate in Gelatinous Matrices of Chitosan and Chitin' ENERGY CONVERS. MGMT , vol. 38, no. suppl, 1997, pages S517-S521, XP004061649 uk

**D2: US-A-4 970 150**

(b) In the following arguments, page or column A, lines B to C will be cited as A/B-C.

**2. Novelty**

Document **D1** discloses at page S518 in the fourth para.

- (a) to dissolve crab shell chitosan (produced by Katakurachikkarin Co., Tokyo) in aqueous 2% acetic acid,
- (b) to add 10 equivalents of solid  $\text{CaCl}_2$ ,
- (c) to pour the viscous solution thus obtained into acetone, and
- (d) to centrifuge and dry the precipitated gel to yield hygroscopic gelatinous dry granules.

Therefore, the subject-matter of **claims 1-3 and 9** is not novel.

**3. Inventive step**

(a) Document **D1** also discloses (see the first para. on p. S519) to soak chitosan wet

gel particles in 10%  $\text{CaCl}_2$ -solution.

So, it was quite obvious to the expert to modify the processes disclosed in **D1** by providing a suspension of the chitosan gel and mix said gel with a calcium salt.

Consequently, the subject-matter of **claims 4-8** is not based on an inventive step.

- (b) The subject-matter of **claims 10-42** differs from the teaching of the documents cited in the search report in that none of these documents discloses to adjust the pH to a value of from 4.0 to 6.0 by adding a base.

In **D2**, e.g., the chitosan is precipitated by adding alkali to reach a pH between 8 and 9 (see **D2**, claim 1, 4/63 and 6/10-11).

There is in fact no indication in the prior art cited in the search report which would give the expert a hint as to adjust the pH to a value within the range of from 4 to 6.

Therefore, the subject-matter of **claims 10-42** is based on an inventive step.